DOCUMENT RESUME

ED 174 252 IR 007 536

AUTHOR Rossmiller, Richard; Otto, Wayne
TITLE Bibliography of Publications. 1979 Supplement.
INSTITUTION Wisconsin Univ., Madison. Research and Development Center for Individualized Schooling.
SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C.
PUB DATE Jan 79
GRANT OB-NIE-G-78-0217
NOTE 76p.; For related document, see ED 163 944

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS Cognitive Development; Computer Managed Instruction; Educational Change; *Educational Research; Elementary Secondary Education; Evaluation Methods; *Individualized Instruction; Mathematics Education; Reading Research; School Community Relationship

ABSTRACT

This annotated bibliography of publications by the Wisconsin Research and Development Center for Individualized Schooling provides teachers and administrators with information sources that could improve individualized instruction and learning in elementary and secondary schools. Seventy-one technical reports, theoretical papers, and working papers are listed in six sections: (1) studies of instructional programming for the individual student, (2) studies of administration and organization for instruction, (3) studies in language (reading and communication), (4) studies in mathematics, (5) studies of the implementation of individualized schooling, and (6) evaluation practices in individualized schooling. Also included are a numerical listing of reports/papers, and information on obtaining the documents. (JD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED174252

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

BIBLIOGRAPHY OF PUBLICATIONS
1979 SUPPLEMENT

Wisconsin Research and Development Center
for Individualized Schooling

Richard Rossmiller and Wayne Otto
Co-Directors

School of Education
The University of Wisconsin
Madison, Wisconsin

January 1979

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Richard Rossmiller

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

IR007536

Published by the Wisconsin Research and Development Center for Individualized Schooling. The project presented or reported herein was performed pursuant to a grant from the National Institute of Education, Department of Health, Education, and Welfare. However, the opinions expressed herein do not necessarily reflect the position or policy of the National Institute of Education, and no official endorsement by the National Institute of Education should be inferred.

Center Grant No. OB-NIE-G-78-0217

MISSION STATEMENT

The mission of the Wisconsin Research and Development Center is to improve the quality of education by addressing the full range of issues and problems related to individualized schooling. Teaching, learning, and the problems of individualization are given concurrent attention in the Center's efforts to discover processes and develop strategies and materials for use in the schools. The Center pursues its mission by

- conducting and synthesizing research to clarify the processes of school-age children's learning and development
- conducting and synthesizing research to clarify effective approaches to teaching students basic skills and concepts
- developing and demonstrating improved instructional strategies, processes, and materials for students, teachers, and school administrators
- providing assistance to educators which helps transfer the outcomes of research and development to improved practice in local schools and teacher education institutions

The Wisconsin Research and Development Center is supported with funds from the National Institute of Education and the University of Wisconsin.

WISCONSIN RESEARCH AND DEVELOPMENT
CENTER FOR INDIVIDUALIZED SCHOOLING

TABLE OF CONTENTS

	Page
How to Obtain R & D Center Publications	vii
Studies of Instructional Programming for the Individual Student	1
Longitudinal Study of Children's Conceptual Development.	3
Logical Concept Development in the Preschool and Early Elcmentary Grades	5
Individual Differences in the Development of Metamemory and Metacognition	9
Analysis of Cross-Age Tutoring Processes.	11
Adapting Instruction to Student Learning Styles.	13
Students' Communicative Competence in Instructional Contexts.	15
Instructiona' Programming for the Individual Student in Secondary Schools	17
Movement Organization and Motor Learning.	19
Studies of Administration and Organization for Instruction.	21
Computer Support for Individualized Instruction	23
Organiza'ion of the School for Individualized Instruction.	25
Cost Effectiveness of Individualized Schooling	29
Studies of the Role of Specialist Teachers in IGE Schools	31
Studies of Home-School-Community Relations in IGE Schools.	33
Studies in Language: Reading and Communication.	37
Information Processing in Reading	39
Pictures and Imagery in Children's Language-Processing Situations.	41
Assessment and Analysis of Word Identification Skills in Reading.	45
Aspects of Surface Structure Used by Children in Understanding Sentences	49

Page

Communication Skills Study. 51
Studies Related to Objective-Based
Reading Instruction 53
Development of the Ability to Make
Inferences While Reading. 59

Studies in Mathematics 61

Developing Mathematical Processes 63

Studies of Implementation of
Individualized Schooling 65

Studies of Planned Educational
Change. 67

Evaluation of Practices in
Individualized Schooling 69

Phase I: Large Sample
Basic Study 71
Phase III: Reform/Renewal
Impact of IGE 73

Numerical Listing. 75

Technical Reports 77
Theoretical Papers. 83
Working Papers. 85

Author Index 87

HOW TO OBTAIN R & D CENTER PUBLICATIONS

Most publications listed in this bibliography are available from either the Education Resources Information Center (ERIC) or the Wisconsin R & D Center. Publications designated working papers are neither filed with ERIC nor sold by the R & D Center. Limited numbers of copies are occasionally available from authors.

To obtain a document from ERIC you need the six-digit ERIC Document number given at the end of entries in this bibliography, e.g., ED 104 664. With the ED number you can either go directly to an ERIC microfiche collection in your area, or order copies of the document from the ERIC Document Reproduction Service. A directory of U.S. and foreign microfiche collections is available from the ERIC Document Reproduction Service.

To order publications directly from ERIC, write to:

ERIC Document Reproduction Service
P.O. Box 190
Arlington, Virginia 22210
Telephone: 703-841-1212

Current handling charges and ordering details can be found in the journal Resources in Education or by contacting the U.S. Government Printing Office, Washington, D.C. 20402.

To order publications from the R & D Center, send check or purchase order to:

Center Document Service
1025 W. Johnson Street
Madison, Wisconsin 53706

Document Service prices for Center publications are based on the number of pages (given in bibliographic entries) and can be determined from this table:

No. of Pages	Price per Volume
1 - 25	$ 2.50
26 - 50	4.00
51 - 100	7.00
101 and up	12.00

Prices include shipping and handling and are subject to change without notice. Allow six to eight weeks for delivery. Foreign orders must be prepaid in U.S. funds and will be shipped surface mail.

STUDIES OF INSTRUCTIONAL PROGRAMMING FOR THE INDIVIDUAL STUDENT

LONGITUDINAL STUDY OF CHILDREN'S CONCEPTUAL DEVELOPMENT

Faculty Associates:

Frank H. Hooper, Department of Child and Family Studies
Herbert J. Klausmeier, Department of Educational Psychology

TECHNICAL REPORTS, THEORETICAL PAPERS,
PRACTICAL PAPERS, AND WORKING PAPERS

Sipple, T. S., Hooper, F. H., Swinton, S. S., & McMahan, R. A study of classifying and seriating matrices. Technical Report No. 470. 64 pp. October 1978.

Matrix tasks designed to assess the logical properties of multiple classification and multiple seriation were administered to groups of elementary school children. The tasks included cross class and double series matrices (in a "traditional" format) each of which had a reproduction and a transposition instructional set, and a revised set of cross class and double series matrix tasks using cylinders (height x width variation) in one case and squares (area x color density variation) in another. Subjects were 31 first grade children, 42 third grade children, and 32 fifth grade children. While the third graders received all the tasks, the first graders received only the four traditional format tasks and the two revised squares tasks, and the fifth graders received the four revised matrix tasks only. In accord with the results of previous studies it was anticipated that the reproduction tasks should be easier than each of the transposition cases; that while the two reproduction cases (class and series) should be of equivalent difficulty, no predictions were suggested for the transposition cases; and finally, that the revised double series tasks should be of equivalent or lesser difficulty when compared to the revised cross class tasks.

Task presentation order effects and consistent sex differences were absent. Regarding the traditional matrix tasks, grade level differences (Grade 1 vs. Grade 3) were observed for all four tasks but reached statistical significance for cross class tasks only; reproduction of the double series matrix was significantly easier than transposition; no intermatrix reproduction task comparisons were significant while cross class transposition was significantly easier than double series transposition. Moreover, approximately 50% of the children who passed a cross class task and failed double series responded with a cross classification in the traditional blue cylinders format. Eighty-five percent of these children passed the double series matrices in the revised formats. Regarding the

revised matrix tasks in which stimulus conditions, number of possible correct solutions, and components of visual memory were all held constant, cross class was significantly more difficult at the third grade level in both green square and blue cylinder formats. Further, there were no difficulty differences between the revised green square and revised cylinder formats. Since comparisons between the traditional format matrix tasks are conceptually and methodologically suspect, primary reliance must be placed upon the revised task formats. Accordingly, cross classification appears to be more difficult than double seriation for children of transitional status.

LOGICAL CONCEPT DEVELOPMENT IN THE PRESCHOOL AND EARLY ELEMENTARY GRADES

Faculty Associates:

Frank H. Hooper, Department of Child and Family Studies
Joseph T. Lawton, Department of Child and Family Studies

TECHNICAL REPORTS, THEORETICAL PAPERS, PRACTICAL PAPERS, AND WORKING PAPERS

Lawton, J. T., & Brown, D. L. Teacher and child verbalizations during small group and related learning activities. Technical Report No. 467. 84 pp. September 1978.

The relationships between the aims and teaching methods of both a formal and an informal preschool program, and types of verbal utterances used in small group instructional times and related learning activity times were examined.

Thirty-two videotapes were made in order to record and measure type and frequency of teacher and child verbalizations. A questionnaire was devised and filled out by the teachers in each program in order to establish an estimate of the theoretical and pedagogical principles underlining the programs.

The compiled data were analyzed by applying data on teacher-child verbalizations and verbal interactions to: (a) validate teacher stated theoretical and pedagogical principles, and (b) compare types and frequencies of teacher-child verbalizations and verbal interactions occurring within and between both programs in instructional small group and related learning activities.

It was seen in the results of the questionnaire that the Ausubelian teachers strongly endorsed only Ausubelian items. The Piagetian teachers also endorsed, though not so strongly, items which related to their own program. However, they endorsed several of the Ausubelian items in addition to their own. The most likely explanation for this is that the endorsed items referred to a degree of structure the Piagetian teachers would likely support.

Structuring of small-group instruction in both programs was mainly teacher-directed. The type and category of teacher utterances provided more support for predictions regarding expected teacher verbalizations in the Ausubelian than the Piagetian program.

The fact that teachers from both groups used similar types and categories of utterances (almost totally direct statements and questions) during subsequent learning activities was surprising. It was expected that Piagetian teacher utterances would be more indirect during the free-rotation, activity center sessions than was the case. Although there was little similarity between teacher and child utterances during small group learning activities, there appeared to be a modelling effect on child utterances during subsequent learning activities.

Finally, there is some indication from the data that a dichotomy exists between these teachers' projected form of verbalizations and what occurred in practice. Close monitoring of both teacher and child verbalizations seems warranted in order to affect desired adaptations to particular types of teacher-child verbalizations.

Lawton, J., Hooper, F., Saunders, R., & Roth, P. A comparison of three early childhood instructional programs. Technical Report No. 462. 270 pp. August 1978.

The first phase of a longitudinal study comparing the effects of both a formal and open-framework program on the intellectual development of young children was completed during 1975-1976 at the University of Wisconsin Preschool Laboratory.

The formal preschool program is based primarily on Ausubel's theory of learning and in part on Piaget's developmental theory. The informal preschool program is based on Piaget's theory of development; specifically, the preoperational and concrete-operational stages. The control preschool program is not based on any particular theory of intellectual development.

Primary assessment measures included two standardized indices (The Peabody Picture Vocabulary Test, Forms A and B, and The Raven Coloured Progressive Matrices Test), and a series of logical concept tasks assessing relations (transitive inference, seriation, and multiple seriation), classification (dichotomous sorting, some-all, class inclusion, and multiple classification), and conservation (number, length, surface area, weight, internal, occupied and compensatory/displacement volume). At midyear a battery of short-term summative assessment tasks of classification and conservation were administered to a sample of 12 children from both experimental groups. A time interval of 6 to 7 months separated the identifical pretest and posttest. A delayed posttest was administered to children in the Ausubelian and "control" preschool programs 4 to 5 months after completion of the posttests.

Primary data analyses consisted of a series of MANOVA and ANOVA comparisons with two major contrasts: (a) combined experimental conditions versus control subjects and (b) the Ausubelian condition versus the Piagetian condition.

It was concluded that both experimental models are superior to conventional preschool programs in enhancing the growth of logical concept attainment. The Ausubelian model appeared more effective in facilitating development of such concepts in the short run.

INDIVIDUAL DIFFERENCES IN THE DEVELOPMENT OF METAMEMORY AND METACOGNITION

Faculty Associate:

Steven R. Yussen, Department of Educational Psychology

TECHNICAL REPORTS, THEORETICAL PAPERS, PRACTICAL PAPERS, AND WORKING PAPERS

Yussen, S. R., & Bird, J. E. The development of metacognitive awareness in memory, communication, and attention. Technical Report No. 452. 29 pp. June 1978. ED 159 607.

Children between three and six years of age were asked a series of questions to determine their understanding (metacognition) that four common variables influence the ease with which a person can remember, communicate, and attend. It was hypothesized and confirmed that (a) the pattern of understanding is the same across the different cognitive realms, (b) more children understand two "easier" metavariables than two "harder" ones and, (c) children's level of understanding increases with age. The easy-hard distinction was based on prior research findings for memory only. Easy items were length (it's easier to cognize about a shorter than a longer list) and interference (it's easier to cognize in the absence of noise than in its presence). Hard items were age (an adult or older child is more cognitively facile than a younger child) and time (it's generally easier to cognize with more time than with less time). The discussion considers children's differential experiences with cognitive variables in everyday situations and possible differences in the concrete-abstract nature of the easy vs. hard variables.

Yussen, S. R., Levin, J. R., Berman, L., & Palm, J. K. Developmental changes in the awareness of memory benefits associated with different types of picture organization. Technical Report No. 450. 12 pp. March 1978. ED 152 433.

The study examined whether an awareness that semantic organization is beneficial to picture recall ("semantic enhancement") precedes an awareness that certain types of organization are more beneficial than others ("levels of processing"). A series of pilot studies was conducted with kindergarten and adult subjects and a formal experiment was conducted with first, third, and fifth graders. Metamemory judgments were elicited by having subjects judge the relative ease of recalling a 3 x 3 array of pictures according to how it was organized: by taxonomic category--semantically (S), by shape category--physically (P), or randomly, (R). Actual memory was

assessed with an independent list of 16 pictures, whose names were recalled after subjects first sorted the list in one of the three ways (S, P, or R). It was found that: All subjects understood semantic enhancement, i.e., S > R, but only fifth graders and adults understood levels-of-processing, i.e., S > P. At all ages there was also an erroneous metacognition--that physical organization results in easier recall than random organization (P > R). The hypothesis was confirmed and it was also argued that some "meta-awareness" is dependent upon specific memory experiences (or the lack thereof) and not general intellectual development.

ANALYSIS OF CROSS-AGE TUTORING PROCESSES

Faculty Associate:

Vernon L. Allen, Department of Psychology

TECHNICAL REPORTS, THEORETICAL PAPERS,
PRACTICAL PAPERS, AND WORKING PAPERS

Brideau, L. B., & Allen, V. L. The effect of race of tutee on tutor's behavior. Working Paper No. 247. 27 pp. December 1978.

This study examined the effect of tutee's race on the tutor's nonverbal behavior. Tutors were 20 male undergraduates at the University of Wisconsin. Tutees (role players) were two black and two white male, seventh graders who were trained prior to the study to perform in a consistent way. Tutoring sessions consisted of dyadic interactions (one tutor, one tutee) lasting approximately 30 minutes. All sessions were videotaped. The dependent measures were tutor's gaze and distance behavior. Three measures of distance behavior were employed: (a) mean distance between tutor and tutee, (b) tutor's reaction to distance changes initiated by the tutee, and (c) simultaneous distance changes. The results showed that the tutor's nonverbal behavior did not change as a function of the tutee's race. That is, the tutor's distance and gaze behavior did not significantly differ when the target was a white or a black tutee.

Plazewski, J. G., & Allen, V. L. Differential use of paralanguage and nonverbal behavior by tutors as a function of relative age of the student. Technical Report No. 491. 38 pp. December 1978.

This experiment examined the use of paralanguage and nonverbal behavior while teaching a lesson intended for an adult the same age as the teacher or for a child much younger than the teacher. Decoders rated the tone of voice used by each speaker from a tape recording, to obtain measures of paralanguage. Trained observers provided measures of nonverbal behavior used by encoders. Results showed that subjects used more variations in pitch, spoke more clearly, more slowly, and more softly when reading to the younger-age than to the same-age listener. Findings showed that when reading to the younger-age listener, the subjects gazed more at the listener and engaged in more eyebrow activity than when reading to the same-age listener. In addition, both the paralanguage and nonverbal behavior used by subjects were rated as being more friendly when addressing the younger-age listener than the same-age listener.

ADAPTING INSTRUCTION TO STUDENT LEARNING STYLES

Faculty Associate:

Penelope L. Peterson, Department of Educational Psychology

TECHNICAL REPORTS, THEORETICAL PAPERS,
PRACTICAL PAPERS, AND WORKING PAPERS

Peterson, P. L. Direct and open instructional approaches: Effective for what and for whom? Working Paper No. 243. 37 pp. October 1978.

After reading reviews of recent research on teaching, one may be convinced that a direct instructional approach is the most effective way of teaching. But a closer look at the research literature suggests that this conclusion is simplistic. A direct instructional approach may be effective for attaining some educational objectives or outcomes, but not others. It may be effective for some kinds of students, but not others. A review of studies that compares direct instruction with more indirect, open, or nontraditional approaches leads to the conclusion that the effectiveness of each approach depends on the kind of student being taught and the educational outcomes to be attained.

STUDENTS' COMMUNICATIVE COMPETENCE IN INSTRUCTIONAL CONTEXTS

Faculty Associate:

Louise Cherry Wilkinson, Department of Educational Psychology

TECHNICAL REPORTS, THEORETICAL PAPERS,
PRACTICAL PAPERS, AND WORKING PAPERS

Cherry Wilkinson, L., & Berman, L. S. Teacher-student interaction and teachers' perceptions of students' communicative competence: A cross-sectional study. Technical Report No. 473. 30 pp. November 1978.

The present study investigated the relationship between teachers' expectations of students' communicative competence in the classroom and teachers' language production. The study includes a sociolinguistic analysis of samples of teacher-student interaction during classroom lessons. The subjects were 55 students in nursery (11), first (20), second (7), and third (17) grades, in 7 classes and their 7 female teachers. All subjects were middle class, native English speakers, who attended or taught at a private school in an urban area. The data suggest that the original version of the teacher expectation model is neither powerful nor consistent in its predictions. The relationship between teachers' expectations of students' communicative ability and interaction during lessons is a complex interaction among: teachers' expectations, the individual teacher, and the measure of behavior.

INSTRUCTIONAL PROGRAMMING FOR THE INDIVIDUAL STUDENT IN SECONDARY SCHOOLS

Faculty Associate:

Herbert J. Klausmeier, Department of Educational Psychology

TECHNICAL REPORTS, THEORETICAL PAPERS
PRACTICAL PAPERS, AND WORKING PAPERS

Klausmeier, H. J., & Lipham, J. M. Prototype plan for cooperative research in basic skills learning and teaching involving R & D Center IGE/Secondary projects and representative middle, junior, and senior high schools. Working Paper No. 228. 37 pp. March 1978.

In this working paper a plan is outlined for carrying out research cooperatively by project staff of the Wisconsin R & D Center for Individualized Schooling and of local schools. The purpose of the research is to improve the learning and teaching of basic skills. The research design calls for gathering baseline information before improvement efforts begin and then again at annual intervals or more frequently after changes are made.

To provide a rationale, broad aims of secondary education are given and enabling objectives to achieve the aims are indicated. Instructional programming for the individual student is explained as a means of improving the learning and teaching of basic skills. Conditions that facilitate instructional programming are indicated. Student outcomes and staff outcomes that will accompany the school's improvement efforts are hypothesized, and illustrative tests and techniques that may be used in evaluating these outcomes are listed. A set of selected references is included in the last section of the paper.

Lehr, J., & Teicher, B. Profiles of successful innovating secondary schools: Associated network of IGE middle, junior, and senior high schools and other schools with innovative programs, 1978. Working Paper No. 231. 90 pp. May 1978.

Profiles of successful innovating secondary schools are indicated in this working paper. Included are 27 middle and junior high schools and 24 senior high schools. These schools form the Associated Network of IGE junior, middle, and senior High Schools and other schools with innovative programs as of 1978.

MOVEMENT ORGANIZATION AND MOTOR LEARNING

Faculty Associate:

George E. Stelmach, Department of Physical Education and Dance

TECHNICAL REPORTS, THEORETICAL PAPERS,
PRACTICAL PAPERS, AND WORKING PAPERS

Stelmach, G. E. Perceptual organization in motor learning. Technical Report No. 472. 51 pp. December 1978.

This paper reviews much of the literature on organization and summarizes the research findings. Measurement problems are thoroughly discussed with observations about motor skill learning. Subsequently, four experiments are described that compare organized and random movement sequences. It was found that organization, whether determined by the experimenter or by the learner, improved movement accuracy and reduced retention loss. Further, it was shown that individual memory representations, built up through structured movement sequences, are not locked to that organization but have generality to other sequences. While the present research provides only a beginning, the data clearly establish the importance of cognitive activity in motor skill learning.

STUDIES OF ADMINISTRATION AND ORGANIZATION FOR INSTRUCTION

COMPUTER SUPPORT FOR INDIVIDUALIZED INSTRUCTION

Faculty Associate:

Donald M. McIsaac, Department of Educational Administration

TECHNICAL REPORTS, THEORETICAL PAPERS
PRACTICAL PAPERS, AND WORKING PAPERS

Bozeman, W. C. An investigation of psychological typology as an intervening variable in the implementation of a computer managed instruction system. Technical Report No. 454. (Ph.D. dissertation) 194 pp. May 1978.

This study was part of a program of research on computer-supported management information systems in education. The purpose of the research was to investigate the implementation and utilization of the Wisconsin System for Instructional Management (WIS-SIM). The study explored the relationships between psychological types of users and factors associated with the implementation and utilization of the system. These factors included apprehension of human-machine systems, confidence in WIS-SIM, and perception of usefulness of WIS-SIM.

Data were collected from staff members of seven schools located in four Wisconsin school districts. These schools participated in the 1975-77 WIS-SIM pilot tests. Relationships between the independent and dependent variables were analyzed using multiple regression, correlational, factor analytic, and chi-square statistics.

The principal conclusions of the study were as follows: (1) A strong correlation was found between introversion and apprehension of human-machine systems. (2) Respondents who preferred using feeling as opposed to thinking as a mode of judgment were associated with displaying greater apprehension of human-machine systems. (3) An association was found between extraversion and confidence in the system and between a thinking preference and confidence. (4) A high correlation was observed between extraversion and perceived usefulness of WIS-SIM. (5) Usefulness was strongly associated with users who had sensation and thinking preferences.

Based upon the findings and conclusions of this research, considerations were suggested for future research and development in management information systems and systems for computer management of instruction.

ORGANIZATION OF THE SCHOOL FOR INDIVIDUALIZED INSTRUCTION

Faculty Associate:

James M. Lipham, Department of Educational Administration

TECHNICAL REPORTS, THEORETICAL PAPERS
PRACTICAL PAPERS, AND WORKING PAPERS

Daresh, J. C. Facilitative environments in senior high schools that individualize instruction. Technical Report No. 457. (Ph.D. dissertation) 267 pp. June 1978.

The purpose of this study was to identify the intra- and extra-organizational factors which either support or inhibit the adoption and maintenance of individualized programs in senior high schools. The study consisted of an intensive, in-depth analysis of six selected schools using field methodology techniques. In each school interviews were conducted with persons holding significant roles within and outside the school.

Some of the major findings were: (1) The leadership behavior of the principal was the most important internal facilitative factor for change. Supportive leadership behavior was essential at all stages of the change process--participative leadership, initially; and instrumental leadership, subsequently. (2) Teacher-advisor programs, utilized for instructional monitoring and personal advisement of students, aided the maintenance of the individualized programs. (3) Teachers well versed in their subject fields and dedicated to the philosophy of individualized instruction were better able to maintain programs of individualized schooling. (4) Superintendents and other central office personnel supported individualized schools by acting as mediators between the schools and communities, and by hiring building administrators committed to the philosophy of individualized education.

Klausmeier, T. W. Desirability and implementation of IGE/Secondary schooling: Middle and junior high schools. Technical Report No. 461. (Ph.D. dissertation) 267 pp. July 1978.

The purpose of this study was to describe staff perceptions of desirability and implementation of IGE/Secondary schooling in a selected sample of six middle and junior high schools which had attempted to implement some aspects of IGE in the past and to explore and explain those factors which the staff of each school perceived to enhance or impede the implementation of IGE.

The methodology used in this study was survey research. An IGE/Secondary questionnaire was developed and administered to the staff of each of the six schools surveyed in the study to gain data concerning the desirability and implementation of IGE/Secondary schooling. A semi-structured interview was used to gain data concerning factors which staff members perceived to enhance or impede the implementation of IGE.

Some major conclusions concerning IGE/Secondary as a total system of education were: (1) The staffs of the six schools surveyed perceived IGE/Secondary as a desirable form of schooling. (2) The staffs perceived IGE/Secondary as having some, but less than adequate implementation, except at one school which had an adequate implementation rating. (3) Principals rated the implementation of IGE/Secondary significantly higher than did teachers. (4) The following factors were perceived by interviewees to enhance the implementation of IGE/Secondary: (a) Summer or released time for teachers to prepare individualized instructional programs; (b) systematic inservice concerning IGE concepts and practices, including visitations to successful IGE schools or having teachers from these schools assist in the inservice programs; (c) multisubject units wherein a team of teachers was responsible for the academic instruction of a common group of students; (d) district commitment to and support of IGE concepts and practices; (e) knowledge and commitment of the principal to IGE concepts and practices; (f) open communication and rapport between the principal and teachers; (g) involvement and commitment of staff members in the change to IGE; (h) involvement of teachers in shared decision making concerning school goals and change efforts; (i) teachers who were perceived by themselves and others as being student-centered as opposed to being primarily subject-centered; (j) common planning time for unit teachers; and (k) teacher aides in sufficient number so that each unit had its own teacher aide for a portion of each day.

Maier, M. J. Desirability and implementation of IGE/Secondary schooling in selected innovative high schools. Technical Report No. 493. (Ph.D. dissertation) 252 pp. December 1978.

The purpose of this study was to assess staff perceptions of desirability and implementation of IGE/Secondary schooling in four high schools which had implemented programs similar to IGE and to identify those factors which enhanced or impeded the implementation of programs similar to IGE/Secondary. The theoretical foundations of the study included IGE principles, social systems theory, leadership theory, and change theory.

Some major conclusions of the study were: (1) IGE/Secondary was perceived to be a desirable system of schooling having some but less than adequate implementation in each of the four schools

studied. (2) Significant differences in the mean desirability and implementation ratings of IGE/Secondary were observed between and among the sample schools. (3) Staff perceptions of the desirability and implementation of IGE/Secondary were related to their roles occupied in the school. (4) Perceptions of desirability and implementation of IGE/Secondary were related to the number of years served in the present position and involvement in team teaching. Perceptions of the desirability of IGE/Secondary were also related to the nature of the subject matter taught.

Neiner, G. A. Analysis of planned change within comprehensive senior high schools that individualize instruction. Technical Report No. 456. (Ph.D. dissertation) 243 pp. June 1978. ED 159 144.

The purpose of this study was to identify and describe key factors operative in the change process that had been perceived as successfully facilitating individualized schooling in comprehensive senior high schools. The theoretical foundations included IGE principles and systems, social systems, decision, change, and leadership theories.

Some major findings were: (1) Creative and supportive educational leadership behavior and continuity in leadership positions on the part of administrators in the school and the district were essential to effecting educational change. (2) Strong commitment to the educational philosophy of individualized schooling, coupled with a combination of decentralized management decision making and centralized curricular development greatly supported the changeover to an individualized instructional program. (3) The following components were necessary to implement change: a shared decision-making structure, creation of a personable environment, an advising system for students, and curricular development for individualized instruction. (4) Giving students credit on the basis of objectives accomplished, and not on the amount of time spent in a course, was an integral component of individualized continuous progress instruction.

Watkins, A. N. Actual and ideal decision-making processes utilized in senior high schools that individualize instruction. Technical Report No. 460. (Ph.D. dissertation) 269 pp. July 1978.

The purpose of this study was to identify and describe the decision-making processes in senior high schools that were implementing programs of individualized schooling. Field methodology, including interviews, observations, and analysis of documents was used to gather data in six senior high schools of varying size located throughout the country, diverse in socio-economic levels, and varying in ethnic composition. Conceptual frameworks from IGE literature and from change, decision, and

organization theories were used to describe underlying philosophies of decision making; the structures, processes, groups, and organizational dimensions for decision making; the involvement of personnel in the decision-making process; and satisfaction of school personnel with structures, processes, and involvement in decision making.

Some major conclusions of the study were: (1) The decision-making structures and processes utilized within the school make a significant contribution to the successful implementation of individualized schooling. (2) The principal performs a major role in determining the decision-making policy and in implementing the decision-making structures and processes. (3) A high level of staff participation in the decision-making process is characteristic of schools implementing programs of individualized schooling, is perceived by staff to be much higher than in traditional schools, is a significant factor in the successful implementation of innovative instructional programs, and contributes highly to staff satisfaction. (4) Formal participation by students and parents in decision making is negligible and is not generally sought. (5) Decision making within the school occurs primarily in small group settings, using a group process with a search for consensus.

COST EFFECTIVENESS OF INDIVIDUALIZED SCHOOLING

Faculty Associates:

Lloyd E. Frohreich, Department of Educational Administration
Richard A. Rossmiller, Department of Educational Administration

TECHNICAL REPORTS, THEORETICAL PAPERS,
PRACTICAL PAPERS, AND WORKING PAPERS

Doro, M. A criterion-related validity study of the principal leadership assessment instrument. Working Paper No. 240. 53 pp. September 1978.

The purpose of this study was to determine whether or not the Principal Leadership Assessment (PLA) instrument effectively diagnoses the relationship between principal leadership and student achievement in reading and mathematics. The PLA consists of certain items which gather data on leadership taken from the Survey of Organizations. The findings of this study failed to expand the usefulness of the PLA. However, a number of possible reasons for this are listed and implications for further research are drawn.

Johnson, H. W. Do principals make a difference? The relationship between principal-related variables and student outcomes in IGE schools. Technical Report No. 492. (Ph.D. dissertation) 218 pp. December 1978.

The purposes of this study were: (1) to determine whether or not the principal has an impact on the outcomes of schooling manifested by pupils, and (2) to determine the nature of the role of the principal in influencing cognitive and affective outcomes manifested by pupils. A principal's "production function" was specified based on a conceptual framework for economic analysis of schooling. Three sets of principal-related variables were identified for inclusion in the model: background, leadership, and utilization of time.

This study reanalyzed a set of data collected in the 1975-76 school year for use by three projects of the Wisconsin Research and Development Center. From a national sample of 41 IGE schools, a subsample of 28 principals was generated for use in the present study.

Generally, the results showed that principals do make a difference in the production of student outcomes. This conclusion is based on the following findings: (1) Subscales of principal leadership,

utilization of time, and background variables were significantly related to subscales of student achievement in reading and mathematics and to subscales of student self-concept (Self-Observation Scales). (2) The variables most important in the production of student achievement in reading and mathematics include "Participation in an IGE Workshop," "Sex," and "Goal Emphasis." (3) The variables most important in the production of student self-concept include "Number of Professional Organizational Meetings Attended," "Membership on District Committees," "Total Noninstructional Time," "Interaction Facilitation," and "Goal Emphasis."

Rossmiller, R. A. Input-output relationships in IGE schools. Technical Report No. 451. 104 pp. April 1978. ED 160 654.

This study examined input-output relationships in reading and mathematics in IGE schools. Education production functions were used to investigate the input and process variables that were most closely related to student self-concept and to student achievement in reading and mathematics. Data for the study comprised 134 variables describing: resource inputs (student self-concept, teacher characteristics, and expenditures for instruction); resource input mixes (allocation of time by teachers and organizational variables); and outcomes of schooling (student achievement in reading and mathematics and student self-concept). The data were obtained during the 1975-76 school year from Instruction and Research (I & R) units in a random sample of 41 IGE elementary schools, 28 of which provided data sufficiently complete to be included in the present study. Stepwise linear regression analysis using a backward selection procedure was employed to examine the relationships among each subset of variables and the measures of school output.

Several variables were found to be related consistently to student achievement in reading or mathematics. Among them were: (1) whether teachers were currently involved in a program of study leading to a degree (reading and mathematics), (2) years of teaching experience (reading), (3) sex of the teacher (mathematics), (4) social maturity of students (reading), (5) social confidence of students (mathematics), (6) teachers' perception of the principal's leadership (reading and mathematics), (7) job satisfaction expressed by teachers (reading), and (8) teacher involvement in decision making (mathematics). These variables were the most useful in explaining variance in student achievement in reading and mathematics.

A set of 12 independent variables was identified that accounted for 78 percent of the variance in reading achievement. A similar set of 12 variables was found that accounted for 71 percent of the variance in mathematics achievement. All of the variables included in these two sets were variables susceptible to control by teachers and administrators.

STUDIES OF THE ROLE OF SPECIALIST TEACHERS IN IGE SCHOOLS

Faculty Associate:

Robert G. Petzold, Department of Curriculum and Instruction

TECHNICAL REPORTS, THEORETICAL PAPERS, PRACTICAL PAPERS, AND WORKING PAPERS

Petzold, R. G. Role of specialist teachers and classroom teachers in art, music, and physical education programs in selected IGE schools: Survey of existing practices. Working Paper No. 227. In press.

This study examined current instructional and organizational practices for art, music, and physical education programs in IGE/MUS-E schools. The study was concerned with collecting descriptive information relative to the roles and instructional responsibilities of specialists and classroom teachers, and the organization of these programs in the schools. The study also assessed the attitudes and opinions held by specialists and classroom teachers regarding certain instructional and organizational conditions related to these special area programs. Data for the study were obtained from 1,455 teachers in 200 IGE schools. Two instruments--the Specialist Questionnaire and the Classroom Teacher Questionnaire--were developed and used to collect data for the study from 525 specialists and 931 classroom teachers.

The conclusions were: (1) These programs in IGE schools are little different from those found in the more traditional age-graded, self-contained classroom settings in terms of instructional scheduling, grouping, and staffing practices. (2) The programs, as well as the specialists, appear to be isolated from the life and curriculum of the school itself. Specialists are not actively involved in the educational decision-making which occurs in I & R units and the IIC, but are concerned with their apparent isolation and lack of understanding of the implications the IGE concept may have for these programs. (3) Specialists are vitally interested in developing instructional programs that are more consistent with IGE as practiced in other areas of the curriculum, but lack the time, administrative support and encouragement, and guidelines necessary to provide direction to their efforts. (4) Classroom teachers, while very supportive of these special area programs and willing to increase their instructional involvement on a cooperative basis with specialists, found that existing conditions in the school and the burdensome responsibilities of both specialists and classroom teachers, precluded efforts to develop meaningful cooperative staffing arrangements.

STUDIES OF HOME-SCHOOL-COMMUNITY RELATIONS IN IGE SCHOOLS

Faculty Associate:

B. Dean Bowles, Department of Educational Administration

TECHNICAL REPORTS, THEORETICAL PAPERS,
PRACTICAL PAPERS, AND WORKING PAPERS

Bartels, L. I. Supports and constraints to home-school-community relations in an urban, inner-city IGE school. Technical Report No. 448. (Ph.D. dissertation) 422 pp. in 2 parts. February 1978. ED 152 907.

The research reported in this study represents an in-depth case study of home-school-community relations at an IGE school located in an inner-city neighborhood of 1 of the 20 largest cities in the United States. The school served a population of 718 black students, the majority of whom lived in a near-by low income housing project. Both the instructional and home-school-community relations programs were highly influenced by guidelines for federal (Title I) and state programs implemented at the school.

Data for the study were collected during a 3-month period of time through the use of field study methods including both formal and informal interviews and observations, and collection of relevant documents. Specific purposes of the study are: (1) to describe the organizational and community environments of an urban, inner-city IGE school; and (2) to describe the home-school-community relations program/activities of an urban, inner-city IGE school.

The descriptive nature of this study provides a useful overview for schools in similar neighborhoods wishing to implement a home-school-community relations program. In addition, findings of the study suggest general implications for schools of education and for federal, state, and district education agencies interested in promoting positive home-school-community relations at the local school level.

Ingram, J. E., Jr. The relationship between school-community relations and student achievement. Technical Report No. 463. (Ph.D. dissertation) 345 pp. in 2 parts. September 1978.

This study examined the relationship between effective school-community relations and student achievement. An interview protocol was developed which gathered the perceptions of 64 parents

of students in grades 4 to 6 regarding effective school-community relations utilizing the five variables of communication, involvement, participation, resolution, and access. The research represented a case study of the school-community relations program at an inner-city school serving a population of 628 Black students. Data for the study were collected utilizing field methodology.

It was concluded that the principal set the tone for the resolution of conflict at the school. Staff members appeared to follow this lead as they sought to resolve conflict. Two-way communication was achieved through the telephone and through notices sent to parents with a detachable portion for parental comments. Parents seldom utilized their perceived access to the school. Involvement and participation activities served as legitimating vehicles for the presence of parents in the school.

Simformations: Materials for Home-School-Community Relations

A major task of the Home-School-Community Relations Project is to develop materials which are useful to school staff members, particularly principals and unit leaders. These materials--called simformations, from information and simulation--center around activities which can contribute to effective home-school-community relations programs. They provide information on various topics and opportunities for participation in learning experiences.

Klenke, W. H., Moser, R., & Fruth, M. J. Simformation 1: Introducing Parents to the Wisconsin Design for Reading Skill Development.

This simformation is designed to introduce parents to the Wisconsin Design and to open communications between the school and the community. Beginning with an activity which helps staffs identify parent needs related to the Design, the simformation continues with a plan for a school-community meeting in which participants take the part of children and are introduced to the Design as part of a reading class. The simformation concludes with a series of follow-up interviews with community members.

Bartels, L. I. Simformation 2: A Guide to Organizing a Volunteer Program in IGE Schools.

This simformation discusses the rationale for a volunteer program as part of a larger home-school-community relations program. Included are "how to" ideas for program planning which range from conducting a needs assessment through coordination and evaluation of a volunteer program. Emphasis is on the volunteer-teacher relationship with suggested activities for the orientation and training of each.

Raskas, H. I. Simformation 3: Home-School Visits.

As a means of improving communication between the home, school, and community and to increase the involvement of the school community in the school's program, this simformation covers visits by a staff member to individual homes and small groups and visits by individual community members to the school. Group meetings at the school are also discussed. Sample letters to parents and suggestions for creating a school handbook are included in the appendix.

Bowles, B. D. Simformation 4: Depth Interview Handbook.

This handbook is a systematic guide for planning and implementing a program of depth interviews either as part of a school-community relations program or as an effort in policy analysis. It includes all necessary information for understanding the advantages and disadvantages of depth interviews, planning and preparing to conduct the interviews, implementing the program, actually conducting the interviews, and writing a report. The handbook also contains examples of materials which are useful in developing a program of depth interviews.

Miles, W. R. Simformation 5: Reporting Student Progress.

The purposes of this simformation are to consider alternative ways to report pupil progress through written means and to consider the process a school or district can follow in changing its current reporting system. A discussion of the goals of a reporting program and examples of actual forms are included.

Cooper, R. J., Maier, M., & Karges, M. L. Simformation 6: Planning, Conducting, and Evaluating Parent-Teacher Conferences.

This simformation provides principals, unit teachers, and teachers with specific recommendations for holding successful parent-teacher conferences. It highlights the necessity for resolving the differing expectations parents and teachers may bring to the conference and suggests specific involvement and two-way communication techniques for facilitating mutually satisfying and productive sessions.

The simformations are available from the R & D Center Document Service, 1025 W. Johnson St., Madison, WI 53706. Simformations cost $3 individually or $15 per set of 6 (with binder).

STUDIES IN LANGUAGE: READING AND COMMUNICATION

INFORMATION PROCESSING IN READING

Faculty Associate:

Dominic W. Massaro, Department of Psychology

TECHNICAL REPORTS, THEORETICAL PAPERS,
PRACTICAL PAPERS, AND WORKING PAPERS

Massaro, D. W. Letter information and orthographic context in word perception. Technical Report No. 453. 40 pp. June 1978.

Theories of word perception in reading can be categorized in terms of the assumption made about whether or not a word context modifies the feature analysis of its component letters. Independence theories assume that the visual information passed on by feature analysis is independent of word context. Nonindependence theories assume that a word context directly influences visual analysis. Some nonindependence theories have assumed that word context enhances feature analysis of letters, others have assumed that word context overrides feature analysis of letters, and some have assumed that word context directs which letters are analyzed. The present experiment provided a critical test between the two classes of theories by independently varying orthographic context and visual letter information in a letter recognition task. The results contradicted the qualitative predictions of the class of nonindependence theories and were accurately described by a quantification of independence theory.

PICTURES AND IMAGERY IN CHILDREN'S LANGUAGE-PROCESSING SITUATIONS

Faculty Associate:

Joel R. Levin, Department of Educational Psychology

TECHNICAL REPORTS, THEORETICAL PAPERS,
PRACTICAL PAPERS, AND WORKING PAPERS

Dunham, T. C., & Levin, J. R. Strategies in reading comprehension: X. Imagery "support" and young children's prose learning. Working Paper No. 229. 10 pp. March 1978.

One hundred and sixty kindergarten and first grade children listened to a narrative passage under one of five experimental conditions. Contrary to research with older children, pre-learning imagery instructions did not facilitate subsequent recall of story information. Neither did concrete support in the form of intermittently provided pictures produce any recall gains for unpictured story information, even though such support had a marked positive effect on recall of pictured information. The pattern of several children's prose-learning studies, including this one, is consistent with the hypothesis that the ability to apply a self-generated imagery strategy is developmentally based. Recent findings in the associative-learning literature lend additional support to this interpretation.

Ghatala, E. S., Levin, J. R., Davis, J. A., & Truman, D. L. Sources of interference when testing for students' learning from sentences. Working Paper No. 238. 27 pp. August 1978.

The present study helps to clarify and extend earlier findings concerning multiple-choice assessment of students' learning from sentences. Interference arising from intersentence similarity was found here to be a function of both the kind of learning strategies students were instructed to employ and the kind of strategies they reported having employed spontaneously. Two major new conclusions follow from the present data: (a) Instructors and test constructors need worry only about certain types of potentially interfering information that is embedded in a set of learning materials; and (b) Even when the conditions are right for substantial interference to occur, such interference can be eliminated if students are induced to employ beneficial sentence-processing strategies.

Levin, J. R., Bender, B. G., & Pressley, M. Strategies in reading comprehension: XII. Pictures, imagery, and children's recall of central versus peripheral sentence information. Working Paper No. 239. 16 pp. August 1978.

Younger and older elementary school children listened to a set of single-sentence mini-stories under three conditions. Control students simply listened, Imagery students attempted to generate content-appropriate visual images while listening, and Picture students were shown actual illustrations while listening. Following presentation of the sentences, the students were tested for recall of both activity-related (central) and other incidental (peripheral) information within each sentence. Pictures and imagery facilitated recall of both types of information, relative to the control condition. However, consistent with a hypothesis generated from previous research, the positive effect of pictures was greater for central than for incidental information. Also consistent with previous research was the finding that the benefits of visual imagery, as a strategy on this task, increased with age.

Levin, J. R., Ghatala, E. S., & Truman, D. L. Reducing inter-sentence interference via contextual aids. Working Paper No. 248. 16 pp. December 1978.

Recent research has suggested that: (a) It is possible to construct pairs of sentences whose information is mutually interfering; and (b) students typically do not process such sentences in ways that are likely to reduce the interference. The present study was conducted to determine whether the provision of contextual aids would help students reduce inter-sentence interference in spite of themselves. Consistent with predictions, when students were presented sentences in distinctive contexts (i.e., activities framed in different specific locations), no interference was observed. In contrast, the usual interference effect was obtained when the sentences were given either no contexts or nondistinctive contexts. Potential educational implications are included with the theoretical discussion.

Levin, J. R., & Pressley, M. Improving children's prose comprehension: Selected strategies that seem to succeed. Theoretical Paper No. 72. 45 pp. August 1978.

Prose-learning strategies are cross-classified according to: (a) whether their success depends primarily on the prose passage itself (prose dependent) or on the individual who is processing the passage (processor dependent); and (b) whether their primary function is one of preparing the learner for the upcoming prose information (stage-setting) or of facilitating learning more directly (storage/retrieval). Given these classifications, selected strategies that seem to hold promise for improving children's prose learning are reviewed in the company of supporting research examples.

Levin, J. R., Pressley, M., & Miller, G. E. Assessing the classroom potential of the keyword method. Working Paper No. 246. 30 pp. November 1978.

The keyword method of foreign language vocabulary learning has proven effective when implemented in highly structured laboratory-like settings. In contrast, the results of a recent study suggest that when the method is implemented in an actual classroom context, its effectiveness may be diminished. Several explanations for this diminution are offered and explored in the four experiments reported here. In addition, suggestions are given for maximizing the classroom potential of the keyword method.

Pressley, M., Levin, J. R., & McCormick, C. B. Young children's learning of foreign language vocabulary: A sentence variation of the keyword method. Working Paper No. 241. 16 pp. October 1978.

The keyword method has been found to facilitate adults' foreign language vocabulary learning. An important ingredient of the method, as originally conceived, is the construction of interactive visual images by the learner. Recent research has indicated that younger elementary school children are not adept at generating such visual images. Consequently, a self-generated sentence variation of the keyword method was devised for the present study. Both second- and fifth-grade students were found to experience large foreign language vocabulary gains when applying the sentence variation. Implications of these results, vis-à-vis both basic and applied research questions, are discussed.

Ruch, M. D., & Levin, J. R. Strategies in reading comprehension: XI. Partial pictures as imagery-retrieval cues in young children's prose recall. Working Paper No. 235. 19 pp. July 1978.

Two experiments, involving first-grade children, were conducted to test a retrieval-inefficiency explanation for the failure of visual imagery to facilitate young children's prose recall. Consistent with this explanation, children who were given imagery-eliciting stimuli ("partial pictures") both during the presentation of a story and at the time questions were asked about the story recalled more story content than children given the partial pictures only during story presentation. An alternative account of these findings--namely that they may be attributed to a general prompting effect--was ruled out in the second experiment. Cognitive-developmental aspects of visual imagery strategies in prose-learning situations are discussed.

ASSESSMENT AND ANALYSIS OF WORD IDENTIFICATION SKILLS IN READING

Faculty Associate:

Dale D. Johnson, Department of Curriculum and Instruction

TECHNICAL REPORTS, THEORETICAL PAPERS, PRACTICAL PAPERS, AND WORKING PAPERS

Connor, U. A study of reading skills among English as a second language learners. Technical Report No. 471. (Ph.D. dissertation) 258 pp. October 1978. ED 162 281.

This investigation was designed primarily (1) to examine the relationships among word-identification, reading comprehension, and listening comprehension of English as a Second Language (ESL) children, and (2) to compare word-identification and reading comprehension skills of ESL and native English-speaking children. An additional purpose of the study was to determine the effects of certain individual, instructional, and socioeconomic variables on ESL students' reading comprehension.

The subjects were 781 native English-speaking children from 9 elementary schools in Wisconsin. In addition, 91 ESL students from the Madison, Wisconsin Public Schools constituted the ESL sample. Some major conclusions were: (1) When the reading levels were the same, the native English-speaking students performed significantly better than ESL students on the majority of the word-identification tasks. (2) On most of the word-identification tasks, the ESL readers at the sixth-grade reading level performed significantly better than their counterparts at the fourth-grade reading level. (3) There was a positive correlation between ESL learners' reading and listening skills when all the subjects were included. No correlation was discovered at the second-grade reading level. (4) There was no association between ESL children's first language background and their performance on word-identification tasks. (5) Ability to read in English as a second language was not affected by the structure of the first language or reading skills in the first language.

Some major findings of the study implied that it would be advantageous for ESL and classroom teachers to know that: (1) ESL learners may be able to comprehend what they read without performing on phonics tasks or recognizing plurals in English as well as native English-speaking students. (2) Since a positive correlation was found between ESL learners' listening and reading comprehension skills, ESL instruction should integrate these two skills.

Dahl, S. S., & Johnson, D. D. The relationship between children's oral language and reading achievement. Working Paper No. 242. 18 pp. November 1978.

First, second, and third grade subjects categorized as high and low ability readers on the basis of sight word recognition and teacher observation, were given a standardized reading test and were engaged in three oral language activities which were tape recorded. Each language sample was transcribed and analyzed on the basis of total words, T-units, garbles, and dependent clauses. There were significant differences between high and low ability readers at each grade level. Oral language samples were analyzed by grade and across reading ability. These are three suggested conclusions: (1) Indicators of linguistic fluency are generally more closely related to reading ability (grade in school) than are indicators of linguistic complexity. (2) Garbles are generally not related to reading ability. (3) Length of utterances are generally not related to reading ability.

Johnson, D. D., Pittelman, S. D., Schwenker, J., & Perry, J. On-line diagnosis of reading difficulties: IV. Technical Report No. 464. 53 pp. September 1978. ED 162 277.

Three studies were conducted to evaluate the performance of elementary school children on various paradigms for assessing vocabulary knowledge on-line. In Study 1, five different approaches to vocabulary assessment were tested: synonym in context, synonym out-of-context, cloze, oral recognition, and self-screening. The subjects were 173 students from a Chicago, Illinois elementary school. Each subject received the Self-screening Test and the Oral Pronunciation Test and was then randomly assigned to one of the three remaining test formats.

A second and third study were conducted to further evaluate the three remaining formats for assessing vocabulary knowledge and to correlate children's performance on the three paradigms with scores on a standardized measure of reading comprehension. Study 2 involved 56 pupils from grades 1, 3, and 5 from the same school as in Study 1. Subjects for Study 3 were 128 pupils from grades 2 through 5 of an elementary school in Champaign, Illinois. Results of Studies 2 and 3 suggest that no single format is superior in assessing vocabulary knowledge across all grade levels. Data from Study 3 also indicate lower correlations between vocabulary knowledge and comprehension ability for grades 2 and 3 than for grades 4 and 5.

Johnson, D. D., Pittelman, S. D., Schwenker, J., Shriberg, L. K., & Morgan-Janty, C. Relationships between word identification skills and reading comprehension of elementary school children. Technical Report No. 490. In press.

The three studies described in this report are the first in a series of studies designed to (a) identify the subskills of word identification which correlate most highly with reading comprehension, and (b) examine various methods of assessing these subskills. The three major areas of word identification skills selected for examination were: phonics, structural analysis, and contextual analysis.

Results from the three studies indicated that all three broad areas of word identification are significantly related to comprehension. In addition, in each study, the contextual analysis subtests achieved higher correlation overall with the comprehension measure than did the structure and phonics subtests. This is most likely due to the fact that contextual analysis and reading comprehension are closely interrelated.

The ultimate goal of this research is to develop an easy-to-administer, empirically based battery of subtests for word identification skills which will provide teachers with important diagnostic information in the areas of phonics, structure, and context.

Johnson, D. D., Pittelman, S. D., Shriberg, L., Schwenker, J., & Morgan-Janty, C. Format effects on vocabulary assessment. Technical Report No. 474. 37 pp. November 1978.

This study is a continuation of two previous studies designed to evaluate techniques for assessing children's vocabulary knowledge. Three paradigms for assessing vocabulary knowledge were evaluated: synonym, synonym in context, and cloze. The vocabulary tests used were a paper-and-pencil adaptation of the on-line tests used in the two previous studies.

Overall, subjects performed similarly on all three vocabulary formats and scores on all three formats correlated significantly with comprehension scores. When subjects' scores on the vocabulary tests were stratified by their performance on a standardized reading comprehension test, however, format effects did emerge.

If the particular format used to assess vocabulary causes subjects of varying comprehension abilities to perform differentially, the obtained scores must be interpreted accordingly. Information is needed about specific testing modes so that informed choices can be made about which of these modes is most appropriate for a particular testing purpose.

ASPECTS OF SURFACE STRUCTURE USED BY CHILDREN IN UNDERSTANDING SENTENCES

Faculty Associates:

W. Charles Read, Department of English and Linguistics
Peter A. Schreiber, Department of English and Linguistics

TECHNICAL REPORTS, THEORETICAL PAPERS,
PRACTICAL PAPERS, AND WORKING PAPERS

Read, C., Schreiber, P., & Walia, J. Why short subjects are harder to find than long ones. Technical Report No. 466. 41 pp. December 1978.

This paper examines certain cues to surface constituency that are salient to children in the comprehension of syntactic structure. Accessibility is studied through a set of experiments requiring seven year old children to repeat certain syntactic constituents. These children can correctly identify subjects and also predicate phrases with surprising accuracy, but their performance appears to depend heavily on prosodic cues, as indicated by the poorer success of children in identifying single pronoun subjects and subjects of sentences with misleading intonation contours. It is argued that duration (phrase-final lengthening) is an especially important cue in children's comprehension of structure and that children may be more heavily dependent on prosodic cues as signals of syntactic structure than are adults. Finally, it is suggested that children's reliance on prosodic cues may relate to the difficulty that many beginning readers have in comprehending what they read (even when they can identify the individual words in a written sentence) since prosodic cues are not systematically preserved in written language.

Schreiber, P., Read, C., & Walia, J. The use of surface structure in comprehension: A review of the literature. Working Paper No. 233. 82 pp. August 1978.

This report reviews the following areas of research literature in psycholinguistics: (a) those studies which propose (partial) theories of how listeners assign an implicit syntactic analysis to sentences and what these implicit analyses are like, and (b) those which report on experimental research designed to reveal various aspects of syntactic processing of children or adults. This review is intended as the background for projected research concerned with children's syntactic processing. The

immediate purpose of this research will be to develop experimental evidence bearing on the nature of the implicit syntactic organization which children from 5 to 8 years old assign to English sentences, as well as on the principles that appear to govern the assignment of such an organization. We also expect to relate this research to questions of pedagogical importance, such as the role of syntax in the acquisition of advanced reading skills. This report will not, however, include any discussion of the authors' preliminary research; instead, it will review, and to some extent, assess the currently available literature in the field.

This report is structured as follows. The first chapter sketches general background assumptions that are widely shared by many current students of psycholinguistics and then describes some general areas of controversy. The second chapter examines several sets of proposals that attempt to describe how sentences are analyzed in comprehension. The third chapter contains a review of the results of the major experimental studies in the field. The final chapter critically explores the methodology of these experimental studies.

COMMUNICATION SKILLS STUDY

Faculty Associate:

W. Patrick Dickson, Department of Child and Family Studies

TECHNICAL REPORTS, THEORETICAL PAPERS,
PRACTICAL PAPERS, AND WORKING PAPERS

Dickson, W. P. The computer as consultant: The next generation of statistical computing. Working Paper No. 244. 16 pp. December 1978.

This paper suggests that developers of statistical packages have a responsibility to foolproof their packages so that their output is as free from statistical "accidents" as possible. To this end, four principles are proposed. The Watchdog Principle states that a statistical package should warn its users when they appear to be misusing a statistical procedure. Such warnings might be issued when a variable appears to have outliers or a chi-square analysis is run on a table with many empty cells. The Prescriptive Principle states that a statistical package should prescribe appropriate actions in response to statistical errors detected. Such prescriptions might include recommending Winsorizing or trimming in the case of outliers or collapsing categories in the case of chi-square analysis on a table with many empty cells. The Tutorial Principle states that a statistical package should systematically guide its users to acquire greater statistical sophistication. The package as tutor would (when requested to do so) quote several pages from respected texts discussing such issues as handling outliers or collapsing categories and provide users with a set of suggested readings. This information retrieval function could maximize learning by delivering up-to-date statistical wisdom at the moment when the user's motivation to learn is at a maximum. The Feedback Principle states that a statistical package should be the focus of systematic research on how it is being used. Such self-scrutiny would guide the further development and improvement of the package.

Stephenson, G. R., Dickson, W. P., Tsui, P., & Wende, J. L. SSR keyboard user's manual. Working Paper No. 232. 9 pp. May 1978.

This manual describes how to record data on an SSR keyboard connected to a Uher 4400 Report stereo tape recorder. The SSR keyboard is used for recording observations encoded as a series of letters and numbers. The codes are recorded on the tape recorder for later transcription to a computer file. Procedures for transcribing the data from the tape are given in the SSR Keyboard Data Transcription Manual. Other documents concerning the construction of coding systems are being prepared.

STUDIES RELATED TO OBJECTIVE-BASED READING INSTRUCTION

Faculty Associate:

Wayne Otto, Department of Curriculum and Instruction

TECHNICAL REPORTS, THEORETICAL PAPERS,
PRACTICAL PAPERS, AND WORKING PAPERS

Amoroso, H. C., Jr. A psycholinguistic analysis of the oral and silent reading performance of selected Standard IV subjects in Trinidad and Tobago, West Indies. Technical Report No. 468. (Ph.D. dissertation) 137 pp. September 1978. ED 162 278.

The purpose of this study was to describe and analyze the oral and silent reading performance of selected students in Trinidad and Tobago, West Indies. Specifically, this study sought to answer two questions. First, what is the overall reading ability of selected Standard IV students as measured by norm- and by criterion-referenced reading tests? Second, what is the extent to which linguistically related reading difficulties are manifested by selected Standard IV students in their oral and silent reading performance?

The Gates-MacGinitie Reading Test and four subtests of the Wisconsin Tests of Reading Skill Development--Word Attack were administered to 200 good and poor readers in 4 districts of Trinidad.

The results of the study verify the existence of a reading problem in the sample population. Together, the data warrant the following conclusions: (1) No group of readers was observed to make highly effective use of oral or silent reading strategies as a means of facilitating meaning acquisition. (2) Regardless of reading ability, subjects encountered difficulties consistently maintaining the grammatical and meaning structures of materials written in standard English. (3) Few subjects were able to adequately verbalize about the stories they read.

Behind the results lie two consistent factors--deficiencies in mechanical skills and unfamiliarity with word meanings and concepts. In view of the evidence, two levels of linguistically related reading difficulties are inferred. Indirectly, instructional goals that have emphasized the aim of the reading program as the "development of clear and fluent speech" may have undermined the acquisition of basic reading skills in this population. Directly, semantic aspects of Trinidadian vernacular may have interfered with the subjects' ability to gain meaning from words and ideas that are outside their realm of experience.

Blohm, P. J. Effects of skill-based instruction and skill mastery testing on general reading comprehension of tenth grade poor comprehenders. Technical Report No. 449. (Ph.D. dissertation) 309 pp. in 2 parts. March 1978. ED 153 187.

The purpose of this study was to examine the effect on general reading comprehension of teaching and testing four subskills related to the identification of the main idea in prose material. Two general questions guided the planning and implementation of the study. First, will teaching-and-testing and testing-only main idea subskills with poor comprehenders have a measurable positive effect on their general reading comprehension? Second, will the general reading comprehension of students who demonstrate mastery of teaching-and-testing the subskills be improved more than the general comprehension of those who demonstrate mastery of testing-only? A group of 550 tenth-grade students were randomly assigned to three treatments in 19 English classrooms in a central-eastern Wisconsin high school.

Results related to the first question suggest that a combination of teaching-and-testing main idea subskills enhances general comprehension performance immediately following treatment, though not significantly more than testing-only. After one month, the three experimental groups differed from each other. The most substantial difference was between the taught-and-tested group and the untreated control group. The conclusion is that a combination of teaching-and-testing main idea subskills does result in a sustaining positive effect on general reading comprehension.

The results related to the second question suggest that, for immediate purposes, it makes no difference in comprehension performance whether or not subjects demonstrate mastery of subskills after teaching-and-testing or after testing-only. One month later, however, there is a difference in favor of the group that was taught-and-tested. The suggestion is that the teaching-and-testing masters tend to retain their improved performance while the testing-only masters do not.

Klopp, P. M., Hougum, C. L., Stewart, D. M., & Kamm, K. Technical manual for forms P and Q of the Wisconsin tests of reading skill development: Comprehension. Technical Report No. 465. 127 pp. September 1978. ED 162 279.

Test forms P and Q of the Wisconsin Tests of Reading Skill Development: Comprehension assess the 40 skills and objectives of the Wisconsin Design for Reading Skill Development: Comprehension commercial edition. The tests are a second major edition and represent a substantial redevelopment effort. This report describes the procedures that were used in developing the

criterion-referenced tests. The report contains individual test descriptions as well as general descriptive information regarding readability specifications, item content and test format, test directions, scoring and use of test results, and the tryout population. A rationale for test criteria is also included. Estimated summary statistics for both test forms and actual summary statistics determined by administering the commercial edition are provided.

Smith, M. G. A comparison between oral reading miscues of readers with normal intelligence and educable mentally retarded readers. Technical Report No. 469. (Ph.D. dissertation) 149 pp. October 1978. ED 162 280.

This study was a preliminary investigation of the oral reading miscue patterns of normal and educable mentally retarded students reading between grade levels 2.0 and 3.9.

Comparison I consisted of an analysis of variance between the raw scores of the groups in each subcategory of the RMI. It provided an intergroup analysis with no consideration for total number of miscues made. Significant differences were found in all categories except Correction-Yes, Correction-Partial, Meaning Change-No, Semantic Acceptability-Yes, Comprehension-No Loss, Grammatical Relationships-Strength, and Grammatical Relationships-Overcorrection.

Comparison II compared subcategory totals to total number of group miscues in each RMI category. The findings of this comparison indicated that the groups displayed similar abilities to utilize sound and graphic cues in decoding unknown words. Both groups substituted single words of the same grammatical function to a similar degree. Normal readers, however, appeared to correct more miscues than did retarded readers and appeared more proficient in producing grammatically and semantically acceptable structures.

Mentally retarded readers exhibited a tendency to make a greater percentage of meaning-changing miscues; as a result, they also produced a greater number of structures which caused partial or complete loss of comprehension. Normal readers showed a greater tendency to utilize meaning and grammatic cues and to correct miscues efficiently, while retarded readers tended to use grammatic cues while often ignoring meaning factors.

Although differences did exist between the groups, it was apparent that mentally retarded readers were utilizing the reading strategies tapped by the Goodman RMI. The majority of these reading strategies, however, were not used as efficiently by the retarded group as by the normal readers.

Wilkie, E. B. A trial of materials designed to improve readers' comprehension skills. Working Paper No. 230. 326 pp. in 2 parts. May 1978.

This report describes the written materials developed to improve fifth grade students' reading comprehension skills and presents the results of a formal trial of the materials. Specific reading comprehension skills have been identified and related behavioral objectives have been developed as part of the Wisconsin Design for Reading Skill Development (Design). The comprehension materials used to teach specific Design skills are: (1) a supplementary text on an environmental theme, (2) four sets of reading comprehension skill development activities in separate booklets, each with a separate answer key, and (3) four multiple-choice tests of the text's content. Each skill development activity is placed next to the text that contains the information relevant to that activity. For this reason, we consider them to be an adjunct aid, and refer to them as adjacent-to-text activities.

The purpose of the trial was threefold. First, to learn whether students in a typical classroom setting would benefit from using the reading comprehension skill development materials. Second, to learn how reliable, or internally consistent the four tests of content comprehension would be and to obtain data on the difficulty of each test item, and the discriminability of test item options. Third, to learn how teachers would like using the materials and to get any suggestions they had that might lead to modification of the materials and further experimentation.

Wilkie, E. B. The effects of adjacent-to-text activities on the development of reading comprehension skills and on the comprehension of text content. Technical Report No. 458. (Ph.D. dissertation) 370 pp. in 2 parts. June 1978. ED 159 608.

The major purpose of this study was to determine whether a set of expository passages designed with adjacent-to-text activities (a type of adjunct aid) would facilitate the learning of reading comprehension skills concurrent with improving the comprehension of the text content. A second purpose was to determine whether written feedback would increase the effectiveness of adjacent-to-text activities. Other variables examined in testing the effectiveness of the technique were reading ability, prior knowledge, and skill application without the assistance of adjacent-to-text activities.

Good, average, and poor readers in a combination fifth-sixth grade classroom were randomly assigned to one of three groups. The treatment materials were designed by the investigator and included expository passages, adjacent-to-text activities, and answer keys to accompany the activities. The activities were

designed to develop the Level E skills identified for the Wisconsin Design for Reading Skill Development: Comprehension.

The major conclusion from the study was that although there was no evidence of skill development, the significant result of the comparison of group means on the measure of text content comprehension suggests that the adjacent-to-text activities appear to function to direct readers' attention to relevant text inducing more active and thorough text processing. For this reason, research on the feasibility of the use of an adjunct aid format to improve readers' skills should continue.

Witte, P. L. An investigation of the imaging behaviors of good and poor fourth grade readers with easy and difficult text. Technical Report No. 455. 87 pp. June 1978. ED 159 606.

This study investigated the ways in which good readers, difference-poor readers, and deficit-poor readers at the fourth grade level differ in their use of imagery while reading. The subjects were 30 good readers, 30 difference-poor readers, and 30 deficit-poor readers. They were selected on the basis of Stanford Diagnostic Reading Test scores from a total of 236 fourth grade students. There were equal numbers of boys and girls in each reader group, and the subjects were matched on SES using parental occupation as an index of SES.

These 90 subjects performed the following task: Each subject read two passages, one at the third grade level and one at the fourth grade level. The subjects were instructed to stop at the end of each sentence. If the sentence gave them a picture in their mind, they were asked to describe it. If the sentence did not give them a picture, they were instructed to say "no" and to continue reading. Each subject also answered five comprehension questions about each of the two passages. The subjects' responses were then analyzed in terms of three variables: (1) number of images reported for each passage, (2) text dependency of the images reported, and (3) completeness of the images reported.

The results showed that there were significant differences between good readers and difference-poor readers, and between good readers and deficit-poor readers for number of images reported and for the text dependency of the images reported. These differences were in favor of the good readers. The differences between difference-poor and deficit-poor readers were not significant for any of the variables, and there were no significant differences among any of the reader groups for completeness of the images reported.

Wolf, A. E. Generalizability of Reading Miscue Inventory scores generated by average readers in grade three on basal-reader fictional selections of comparable length and readability level. Technical Report No. 459. (Ph.D. dissertation) 251 pp. July 1978.

The primary purpose of this study was to investigate the reliability of Reading Miscue Inventory (RMI) scores when subjects read different reading selections. Reliability was investigated within the framework of Cronbach's Generalizability Theory. The secondary purpose was to investigate three methodological questions: Would the number of errors scored affect the outcome of the study? Would the choice of dependent variable affect the outcome of the study? Would the three selections written at the same readability level be of comparable difficulty according to three other measures?

Twenty average readers in grade three read three fictional basal-reader selections of comparable length written at the grade four readability level. Univariate analyses of variance were calculated for the nine RMI categories and for four scoring options.

The conclusions were: (1) Generalizability coefficients in virtually all RMI categories under all four scoring options were too low to justify using scores for decision-making in research or diagnosis. (2) More variance in observed RMI scores was unexplained than explained. (3) Subjects varied considerably in ability to use graphophonic, syntactic, and semantic constraints when making oral reading errors. (4) There was considerable constant error associated with reading different selections. (5) The generalizability coefficients for RMI scores based on only the first 25 errors were much lower than those based on all the errors made. (6) In RMI categories with three scoring alternatives, generalizability coefficients differed when different univariate dependent variables were created, but there was no obvious pattern to the affect. (7) Matching selections on readability level did not ensure that they were of comparable difficulty on other measures. (8) The concept of passage difficulty is viable: Selections could be rank-ordered for difficulty.

DEVELOPMENT OF THE ABILITY TO MAKE INFERENCES WHILE READING

Faculty Associate:

Fred W. Danner, Department of Educational Psychology

TECHNICAL REPORTS, THEORETICAL PAPERS,
PRACTICAL PAPERS, AND WORKING PAPERS

Danner, F. W., & Mathews, S. R., II. The development of the ability to make inferences while reading. Working Paper No. 236. 12 pp. August 1978.

This study was an attempt to determine whether young children generate inferences while they read or only later in response to tasks which require inferences. Children from grades two and six read passages, each of which contained two premise statements which could be combined to form a simple transitive inference. Immediately after the presentation of each passage, the children were asked to read and rapidly verify the truth value of statements based on information presented in individual sentences, or on information which could be inferred from a combination of two sentences. Two indices of the timing of inference making were used--one based upon the position of premise statements in the passages and the other based upon the probability of correctly verifying inferences as a function of accuracy on the component premises. These measures indicated that children from both grades generated inferences while they were reading.

STUDIES IN MATHEMATICS

DEVELOPING MATHEMATICAL PROCESSES

Faculty Associates:

John G. Harvey, Department of Curriculum and Instruction; Mathematics
Thomas A. Romberg, Department of Curriculum and Instruction
J. Fred Weaver, Department of Curriculum and Instruction

TECHNICAL REPORTS, THEORETICAL PAPERS,
PRACTICAL PAPERS, AND WORKING PAPERS

Moser, J. M., Moser, M. K., & Schall, W. E. Developing Mathematical Processes (DMP): User data report level 5. Working Paper No. 245. 147 pp. November 1978.

This report describes the user data for Developing Mathematical Processes (DMP), Level 5. These data were collected during the school years 1976-77 and 1977-78. Data were collected by means of individual interviews conducted at regular intervals during the year. In the 1976-77 school year there were six interviews and during the 1977-78 school year there were four interviews. Teachers from schools located in Wisconsin and New York participated in the study. The data are divided into three categories. First, there are responses to specific questions posed on a written questionnaire that had four parts--individual teacher characteristics, DMP materials, assessment and record keeping, and management and use of the program. Second, teacher comments and reactions to various topics and activities in DMP Level 5 were collected in an unstructured manner. Third, when available, records of children's levels of mastery on the regular objectives of the topics in DMP Level 5 were collected and are reported in this document.

Moser, J. M., Trice, G. N., Moser, M. K., & Schall, W. E. Developing Mathematical Processes (DMP): User data report level 3. Working Paper No. 234. 204 pp. June 1978.

This report describes the user data for Developing Mathematical Processes (DMP), Level 3. These data were collected during the 1976-77 and 1977-78 school years. Data were collected by means of individual interviews conducted at regular intervals during the year; in 1976-77 there were six such interviews and in 1977-78 there were four interviews. Teachers from schools located in the states of California, Wisconsin, and New York participated in the study. The data are divided into three categories. First, there are responses to specific questions posed on a written questionnaire that had four parts--individual

teacher characteristics, DMP materials, assessment and record keeping, and management and use of the program. Second, teacher comments and reactions to various topics and activities in DMP Level 3 were collected in an unstructured manner. Third, when available, records of children's levels of mastery on the regular objectives of the topics in DMP Level 3 were collected and are reported in this document.

Moser, J. M., Trice, G. N., Moser, M. K., & Schall, W. E. Developing Mathematical Processes (DMP): User data report level 4. Working Paper No. 237. 175 pp. August 1978.

This report describes the user data for Developing Mathematical Processes (DMP), Level 4. These data were collected during the school years 1976-77 and 1977-78. Data were collected by means of individual interviews conducted at regular intervals during the year. In the 1976-77 school year there were six interviews and during the 1977-78 school year there were four interviews. Teachers from schools located in the states of California, Wisconsin, and New York participated in the study. The data are divided into three categories. First there are responses to specific questions posed on a written questionnaire that had four parts--individual teacher characteristics, DMP materials, assessment and record keeping, and management and use of the program. Second, teacher comments and reactions to various topics and activities in DMP Level 4 were collected in an unstructured manner. Third, when available, records of children's levels of mastery on the regular objectives of the topics in DMP Level 4 were collected and are reported in this document.

STUDIES OF IMPLEMENTATION OF INDIVIDUALIZED SCHOOLING

STUDIES OF PLANNED EDUCATIONAL CHANGE

Faculty Associates:

William J. Davis, Department of Educational Administration
Marvin J. Pruth, Department of Educational Administration

TECHNICAL REPORTS, THEORETICAL PAPERS,
PRACTICAL PAPERS, AND WORKING PAPERS

Gaddis, M. T. Organizational and personal constraints on the successful institutionalization of Individually Guided Education. Technical Report No. 447. (Ph.D. dissertation) 250 pp. January 1978.

The purpose of the study was to discover those organizational and personal variables which have prevented some elementary schools from institutionalizing Individually Guided Education. The study proposed to answer the following questions: (1) How did school personnel initially become aware of IGE? (2) What commitments were made to implement IGE in the school? (3) How was the IGE program implemented within the school? (4) What support was needed by the school to maintain its IGE program? (5) What variables caused the school to discontinue its IGE program?

The sample schools were selected from respondents to a Wisconsin Research and Development Center questionnaire. The eight schools surveyed were among those that, after functioning as IGE schools for three or more years, no longer considered themselves in IGE. Survey research techniques utilizing a semi-structured telephone interview schedule were employed to collect data from teachers, principals, and district office personnel. The data were categorized, coded, and tabulated by school and respondent position. Also included were respondents' comments relevant to the research questions.

Some major conclusions were: (1) Teachers rated lack of teacher commitment as the most significant cause for their school to drop IGE. (2) Principals rated interpersonal conflicts among teachers as the most significant cause of discontinuance. (3) District office personnal rated no continuing staff development as the most significant cause of discontinuance. (4) All respondents rated withdrawal of district financial support as a major cause of discontinuance. (5) The transfer of the principal contributed to the discontinuance of the program. (6) No IGE training for new staff members was cited as a significant cause of discontinuance.

EVALUATION OF PRACTICES IN INDIVIDUALIZED SCHOOLING

PHASE I: LARGE SAMPLE BASIC STUDY

Faculty Associates:

Gary G. Price, Department of Curriculum and Instruction
Thomas A. Romberg, Department of Curriculum and Instruction

TECHNICAL REPORTS, THEORETICAL PAPERS, PRACTICAL PAPERS, AND WORKING PAPERS

Price, G. G., Janicki, T. C., Howard, J. A., Stewart, D. M. Buchanan, A. E., & Romberg, T. A. Overview of school and unit variables and their structural relations in Phase I of the IGE evaluation. Technical Report No. 475. In press.

The following reports by the above authors provide specific discussion of the variables that are part of the analysis in Phase I of the Evaluation of Practices in Individualized Schooling. Included in each discussion is a verbal definition of the variable, a list of the questionnaire items on which the variable is based, a technical explanation of the procedures used to scale the variable, a description of the distribution of the variable in the 156 schools that participated in the Phase I study, and the internal consistency of the variable. Most readers would find it useful to read Technical Report No. 475, Overview of School and Unit Variables and their Structural Relations in Phase I of the IGE Evaluation, before beginning the subsequent reports.

Procedures used in Phase I of the IGE evaluation to scale the variable Interorganizational Relations. Technical Report No. 476. 20 pp. December 1978.

Procedures used in Phase I of the IGE evaluation to scale the variable Procedures Fostering Coordination and Improvement of the School Program. Technical Report No. 477. 32 pp. December 1978.

Procedures used in Phase I of the IGE evaluation to scale the variable General Staff Background. Technical Report No. 478. 16 pp. December 1978.

Procedures used in Phase I of the IGE evaluation to scale the variable Intraorganizational Structure. Technical Report No. 479. In press.

Procedures used in Phase I of the IGE evaluation to scale the variable Belief in Individual Differences. Technical Report No. 480. 11 pp. December 1978.

Procedures used in Phase I of the IGE evaluation to scale the variable View of Learning: Constructivism vs. Behaviorism. Technical Report No. 481. 14 pp. December 1978.

Procedures used in Phase I of the IGE evaluation to scale the variable School's Demographic Setting. Technical Report No. 482. In press.

Procedures used in Phase I of the IGE evaluation to scale the variable General Implementation of the Instructional Programming Model. Technical Report No. 483. 27 pp. December 1978.

Procedures used in Phase I of the IGE evaluation to scale the variable Teacher Job Satisfaction. Technical Report No. 484. 13 pp. December 1978.

Procedures used in Phase I of the IGE evaluation to scale the variable Utilization of Curriculum Resources. Technical Report No. 485. In press.

Procedures used in Phase I of the IGE evaluation to scale the variable Information Acquisition. Technical Report No. 486. In press.

Procedures used in Phase I of the IGE evaluation to scale the variable Individualization of Instructional Decisions. Technical Report No. 487. In press.

Procedures used in Phase I of the IGE evaluation to scale the variable Management of Grouping and of Instructional Continuity. Technical Report No. 488. In press.

Procedures used in Phase I of the IGE evaluation to scale the variable Allocated Learning Time. Technical Report No. 489. In press.

PHASE III: REFORM/RENEWAL IMPACT OF IGE

Faculty Associates:

Thomas S. Popkewitz, Department of Curriculum and Instruction
Thomas A. Romberg, Department of Curriculum and Instruction
B. Robert Tabachnick, Department of Curriculum and Instruction
Gary G. Wehlage, Department of Curriculum and Instruction

TECHNICAL REPORTS, THEORETICAL PAPERS,
PRACTICAL PAPERS, AND WORKING PAPERS

Popkewitz, T. S. Educational research: Values and visions of social order. Theoretical Paper No. 71. 45 pp. September 1978.

Educational research involves social values. It contains lines of reasoning established through discourse within a scientific community and within larger historical and cultural structures. The values affirmed in research have possible political functions. Theories and methods not only describe, but give direction to, how social events are to be challenged. The dispositional character of research is often ignored in discussions of social science. Yet the increasing use of research perspectives to define the events of our daily lives makes it imperative that the social values and beliefs underlying inquiry be continually scrutinized.

NUMERICAL LISTING

TECHNICAL REPORTS

No. 447 Gaddis, M. T. Organizational and personal constraints on the successful institutionalization of Individually Guided Education. Technical Report No. 447. (Ph.D. dissertation) 250 pp. January 1978.

No. 448 Bartels, L. I. Supports and constraints to home-school-community relations in an urban, inner-city IGE school. Technical Report No. 448. (Ph.D. dissertation) 422 pp. in 2 parts. February 1978. ED 152 907.

No. 449 Blohm, P. J. Effects of skill-based instruction and skill mastery testing on general reading comprehension of tenth grade poor comprehenders. Technical Report No. 449. (Ph.D. dissertation) 309 pp. in 2 parts. March 1978. ED 153 187.

No. 450 Yussen, S. R., Levin, J. R., Berman, L., & Palm, J. K. Developmental changes in the awareness of memory benefits associated with different types of picture organization. Technical Report No. 450. 12 pp. March 1978. ED 152 433.

No. 451 Rossmiller, R. A. Input-output relationships in IGE schools. Technical Report No. 451. 104 pp. April 1978. ED 160 654.

No. 452 Yussen, S. R., & Bird, J. E. The development of meta-cognitive awareness in memory, communication, and attention. Technical Report No. 452. 29 pp. June 1978. ED 159 607.

No. 453 Massaro, D. W. Letter information and orthographic context in word perception. Technical Report No. 453. 40 pp. June 1978.

No. 454 Bozeman, W. C. An investigation of psychological typology as an intervening variable in the implementation of a computer managed instruction system. Technical Report No. 454. (Ph.D. dissertation) 194 pp. May 1978.

No. 455 Witte, P. L. An investigation of the imaging behaviors of good and poor fourth grade readers with easy and difficult text. Technical Report No. 455. 87 pp. June 1978. ED 159 606.

No. 456 Neiner, G. A. Analysis of planned change within comprehensive senior high schools that individualize instruction. Technical Report No. 456. (Ph.D. dissertation) 243 pp. June 1978. ED 159 144.

TECHNICAL REPORTS

No. 457 Daresh, J. C. Facilitative environments in senior high schools that individualize instruction. Technical Report No. 457. (Ph.D. dissertation) 267 pp. June 1978.

No. 458 Wilkie, E. B. The effects of adjacent-to-text activities on the development of reading comprehension skills and on the comprehension of text content. Technical Report No. 458. (Ph.D. dissertation) 370 pp. in 2 parts. June 1978.

No. 459 Wolf, A. E. Generalizability of reading miscue inventory scores generated by average readers in grade three on basal-reader fictional selections of comparable length and readability level. Technical Report No. 459. (Ph.D. dissertation) 251 pp. July 1978.

No. 460 Watkins, A. N. Actual and ideal decision-making processes utilized in senior high schools that individualize instruction. Technical Report No. 460. (Ph.D. dissertation) 269 pp. July 1978.

No. 461 Klausmeier, T. W. Desirability and implementation of IGE/Secondary schooling: Middle and junior high schools. Technical Report No. 461. (Ph.D. dissertation) 267 pp. July 1978.

No. 462 Lawton, J., Hooper, F., Saunders, R., & Roth, P. A comparison of three early childhood instructional programs. Technical Report No. 462. 270 pp. August 1978.

No. 463 Ingram, J. E., Jr. The relationship between school-community relations and student achievement. Technical Report No. 463. (Ph.D. dissertation) 345 pp. in 2 parts. September 1978.

No. 464 Johnson, D. D., Pittelman, S. D., Schwenker, J., & Perry, J. On-line diagnosis of reading difficulties: IV. Technical Report No. 464. 53 pp. September 1978.

No. 465 Klopp, P. M., Hougum, C. L., Stewart, D. M., & Kamm, K. Technical manual for forms P and Q of the Wisconsin tests of reading skill development: Comprehension. Technical Report No. 465. 127 pp. September 1978.

No. 466 Read, C., Schreiber, P., & Walia, J. Why short subjects are harder to find than long ones. Technical Report No. 466. 41 pp. December 1978.

TECHNICAL REPORTS

No. 467 Lawton, J. T., & Brown, D. L. Teacher and child verbalizations during small group and related learning activities. Technical Report No. 467. 84 pp. September 1978.

No. 468 Amoroso, H. C., Jr. A psycholinguistic analysis of the oral and silent reading performance of selected standard IV subjects in Trinidad and Tobago, West Indies. Technical Report No. 468. (Ph.D. dissertation) 137 pp. September 1978.

No. 469 Smith, M. G. A comparison between oral reading miscues of readers with normal intelligence and educable mentally retarded readers. Technical Report No. 469. (Ph.D. dissertation) 149 pp. October 1978.

No. 470 Sipple, T. S., Hooper, F. H., Swinton, S. S., & McMahan, R. A study of classifying and seriating matrices. Technical Report No. 470. 64 pp. October 1978.

No. 471 Connor, U. A study of reading skills among English as a second language learners. Technical Report No. 471. (Ph.D. dissertation) 258 pp. October 1978.

No. 472 Stelmach, G. E. Perceptual organization in motor learning. Technical Report No. 472. 51 pp. December 1978.

No. 473 Cherry Wilkinson, L., & Berman, L. S. Teacher-student interaction and teachers' perceptions of students' communicative competence: A cross-sectional study. Technical Report No. 473. 30 pp. November 1978.

No. 474 Johnson, D. D., Pittelman, S. D., Shriberg, L., Schwenker, J., & Morgan-Janty, C. Format effects on vocabulary assessment. Technical Report No. 474. 37 pp. November 1978.

No. 475 Price, G. G., Janicki, T. C., Howard, J. A., Stewart, D. M., Buchanan, A. E., & Romberg, T. A. Overview of school and unit variables and their structural relations in Phase I of the IGE evaluation. Technical Report No. 475. In press.

No. 476 Price, G. G., Janicki, T. C., Howard, J. A., Stewart, D. M., Buchanan, A. E., & Romberg, T. A. Procedures used in Phase I of the IGE evaluation to scale the variable Interorganizational Relations. Technical Report No. 476. 20 pp. December 1978.

TECHNICAL REPORTS

No. 477 Price, G. G., Janicki, T. C., Howard, J. A., Stewart, D. M., Buchanan, A. E., & Romberg, T. A. Procedures used in Phase I of the IGE evaluation to scale the variable Procedures Fostering Coordination and Improvement of the School Program. Technical Report No. 477. 32 pp. December 1978.

No. 478 Price, G. G., Janicki, T. C., Howard, J. A., Stewart, D. M., Buchanan, A. E., & Romberg, T. A. Procedures used in Phase I of the IGE evaluation to scale the variable General Staff Background. Technical Report No. 478. 16 pp. December 1978.

No. 479 Price, G. G., Janicki, T. C., Howard, J. A., Stewart, D. M., Buchanan, A. E., & Romberg, T. A. Procedures used in Phase I of the IGE evaluation to scale the variable Intraorganizational Structure. Technical Report No. 479. In press.

No. 480 Price, G. G., Janicki, T. C., Howard, J. A., Stewart, D. M., Buchanan, A. E., & Romberg, T. A. Procedures used in Phase I of the IGE evaluation to scale the variable Belief in Individual Differences. Technical Report No. 480. 11 pp. December 1978.

No. 481 Price, G. G., Janicki, T. C., Howard, J. A., Stewart, D. M., Buchanan, A. E., & Romberg, T. A. Procedures used in Phase I of the IGE evaluation to scale the variable View of Learning: Constructivism vs. Behaviorism. Technical Report No. 481. 14 pp. December 1978.

No. 482 Price, G. G., Janicki, T. C., Howard, J. A., Stewart, D. M., Buchanan, A. E., & Romberg, T. A. Procedures used in Phase I of the IGE evaluation to scale the variable School's Demographic Setting. Technical Report No. 482. In press.

No. 483 Price, G. G., Janicki, T. C., Howard, J. A., Stewart, D. M., Buchanan, A. E., & Romberg, T. A. Procedures used in Phase I of the IGE evaluation to scale the variable General Implementation of the Instructional Programming Model. Technical Report No. 483. 27 pp. December 1978.

No. 484 Price, G. G., Janicki, T. C., Howard, J. A., Stewart, D. M., Buchanan, A. E., & Romberg, T. A. Procedures used in Phase I of the IGE evaluation to scale the variable Teacher Job Satisfaction. Technical Report No. 484. 13 pp. December 1978.

TECHNICAL REPORTS

No. 485 Price, G. G., Janicki, T. C., Howard, J. A., Stewart, D. M., Buchanan, A. E., & Romberg, T. A. Procedures used in Phase I of the IGE evaluation to scale the variable Utilization of Curriculum Resources. Technical Report No. 485. In press.

No. 486 Price, G. G., Janicki, T. C., Howard, J. A., Stewart, D. M., Buchanan, A. E., & Romberg, T. A. Procedures used in Phase I of the IGE evaluation to scale the variable Information Acquisition. Technical Report No. 486. In press.

No. 487 Price, G. G., Janicki, T. C., Howard, J. A., Stewart, D. M., Buchanan, A. E., & Romberg, T. A. Procedures used in Phase I of the IGE evaluation to scale the variable Individualization of Instructional Decisions. Technical Report No. 487. In press.

No. 488 Price, G. G., Janicki, T. C., Howard, J. A., Stewart, D. M., Buchanan, A. E., & Romberg, T. A. Procedures used in Phase I of the IGE evaluation to scale the variable Management of Grouping and of Instructional Continuity. Technical Report No. 488. In press.

No. 489 Price, G. G., Janicki, T. C., Howard, J. A., Stewart, D. M., Buchanan, A. E., & Romberg, T. A. Procedures used in Phase I of the IGE evaluation to scale the variable Allocated Learning Time. Technical Report No. 489. In press.

No. 490 Johnson, D. D., Pittelman, S. D., Schwenker, J., Shriberg, L. K., & Morgan-Janty, C. Relationships between word identification skills and reading comprehension of elementary school children. Technical Report No. 490. In press.

No. 491 Plazewski, J. G., & Allen, V. L. Differential use of paralanguage and nonverbal behavior by tutors as a function of relative age of the student. Technical Report No. 491. 38 pp. December 1978.

No. 492 Johnson, H. W. Do principals make a difference? The relationship between principal-related variables and student outcomes in IGE schools. Technical Report No. 492. (Ph.D. dissertation) 218 pp. December 1978.

No. 493 Maier, M. J. Desirability and implementation of IGE/Secondary schooling in selected innovative high schools. Technical Report No. 493. (Ph.D. dissertation) 252 pp. December 1978.

THEORETICAL PAPERS

No. 71 Popkewitz, T. S. Educational research: Values and visions of social order. Theoretical Paper No. 71. 45 pp. September 1978.

No. 72 Levin, J. R., & Pressley, M. Improving children's prose comprehension: Selected strategies that seem to succeed. Theoretical Paper No. 72. 45 pp August 1978.

WORKING PAPERS

No. 227 Petzold, R. G. Role of specialist teachers and classroom teachers in art, music, and physical education programs in selected IGE schools: Survey and existing practices. Working Paper No. 227. In press.

No. 228 Klausmeier, H. J., & Lipham, J. M. Prototype plan for cooperative research in basic skills learning and teaching involving R & D Center IGE/Secondary projects and representative middle, junior, and senior high schools. Working Paper No. 228. 37 pp. March 1978.

No. 229 Dunham, T. C., & Levin, J. R. Strategies in reading comprehension: X. Imagery "support" and young children's prose learning. Working Paper No. 229. 10 pp. March 1978.

No. 230 Wilkie, E. B. A trial of materials designed to improve readers' comprehension skills. Working Paper No. 230. 326 pp. in 2 parts. May 1978.

No. 231 Lehr, J., & Teicher, B. Profiles of successful innovating secondary schools: Associated network of IGE middle, junior, and senior high schools and other schools with innovative programs, 1978. Working Paper No. 231. 90 pp. May 1978.

No. 232 Stephenson, G. R., Dickson, W. P., Tsui, P., & Wende, J. L. SSR keyboard user's manual. Working Paper No. 232. 9 pp. May 1978.

No. 233 Schreiber, P., Read, C., & Walia, J. The use of surface structure in comprehension: A review of the literature. Working Paper No. 233. 82 pp. August 1978.

No. 234 Moser, J. M., Trice, G. N., Moser, M. K., & Schall, W. E. Developing Mathematical Processes (DMP): User data report level 3. Working Paper No. 234. 204 pp. June 1978.

No. 235 Ruch, M. D., & Levin, J. R. Strategies in reading comprehension: XI. Partial pictures as imagery-retrieval cues in young children's prose recall. Working Paper No. 235. 19 pp. July 1978.

No. 236 Danner, F. W., & Mathews, S. R. The development of the ability to make inferences while reading. Working Paper No. 236. 12 pp. August 1978.

No. 237 Moser, J. M., Trice, G. N., Moser, M. K., & Schall, W. E. Developing Mathematical Processes (DMP): User data report level 4. Working Paper No. 237. 175 pp. August 1978.

WORKING PAPERS

No. 238 Ghatala, E. S., Levin, J. R., Davis, J. A., & Truman, D. L. Sources of interference when testing for students' learning from sentences. Working Paper No. 238. 27 pp. August 1978.

No. 239 Levin, J. R., Bender, B. G., & Pressley, M. Strategies in reading comprehension: XII. Pictures, imagery, and children's recall of central versus peripheral sentence information. Working Paper No. 239. 16 pp. August 1978.

No. 240 Doro, M. A criterion-related validity study of the principal leadership assessment instrument. Working Paper No. 240. 53 pp. September 1978.

No. 241 Pressley, M., Levin, J. R., & McCormick, C. B. Young children's learning of foreign language vocabulary: A sentence variation of the keyword method. Working Paper No. 241. 16 pp. October 1978.

No. 242 Dahl, S. S., & Johnson, D. D. The relationship between children's oral language and reading achievement. Working Paper No. 242. 18 pp. November 1978.

No. 243 Peterson, P. L. Direct and open instructional approaches: Effective for what and for whom? Working Paper No. 243. 37 pp. October 1978.

No. 244 Dickson, W. P. The computer as consultant: The next generation of statistical computing. Working Paper No. 244. 16 pp. December 1978.

No. 245 Moser, J. M., Moser, M. K., & Schall, W. Developing Mathematical Processes (DMP): User data report level 5. Working Paper No. 245. 147 pp. November 1978.

No. 246 Levin, J. R., Pressley, M., & Miller, G. E. Assessing the classroom potential of the keyword method. Working Paper No. 246. 30 pp. November 1978.

No. 247 Brideau, L. B., & Allen, V. L. The effect of race of tutee on tutor's behavior. Working Paper No. 247. 27 pp. December 1978.

No. 248 Levin, J. R., Ghatala, E. S., & Truman, D. L. Reducing inter-sentence interference via contextual aids. Working Paper No. 248. 16 pp. December 1978.

AUTHOR INDEX

TR = Technical Report
TP = Theoretical Paper
PP = Practical Paper
WP = Working Paper
SIMF = Simformation

AUTHOR INDEX

A

Allen, V. L.	WP 247 (11); TR 491 (11)
Amoroso, H. C., Jr.	TR 468 (53)

B

Bartels, L. I.	TR 448 (33); SIMF 2 (35)
Bender, B. G.	WP 239 (42)
Berman, L.	TR 450 (9); TR 473 (15)
Bird, J. E.	TR 452 (9)
Blohm, P. J.	TR 449 (54)
Bowles, B. D.	SIMF 4 (36)
Bozeman, W. C.	TR 454 (23)
Brideau, L. B.	WP 247 (11)
Brown, D. L.	TR 467 (5)
Buchanan, A. E.	TR 475 (71); TR 476 (71); TR 477 (71); TR 478 (71); TR 479 (71); TR 480 (72); TR 481 (72); TR 482 (72); TR 483 (72); TR 484 (72); TR 485 (72); TR 486 (72); TR 487 (72); TR 488 (72); TR 489 (72)

C

Cherry Wilkinson, L.	TR 473 (15)
Connor, U.	TR 471 (45)
Cooper, R. J.	SIMF 6 (36)

D

Dahl, S. S. WP 242 (46)

Danner, F. W. WP 236 (59)

Daresh, J. C. TR 457 (25)

Davis, J. A. WP 238 (41)

Dickson, W. P. WP 244 (51); WP 232 (51)

Doro, M. WP 240 (29)

Dunham, T. C. WP 229 (41)

F

Fruth, M. J. SIMF 1 (35)

G

Gaddis, M. T. TR 447 (67)

Ghatala, E. S. WP 238 (41); WP 248 (42)

H

Hooper, F. H. TR 470 (3); TR 462 (6)

Hougum, C. L. TR 465 (54)

Howard, J. A. TR 475 (71); TR 476 (71); TR 477 (71); TR 478 (71); TR 479 (71); TR 480 (72); TR 481 (72); TR 482 (72); TR 483 (72); TR 484 (72); TR 485 (72); TR 486 (72); TR 487 (72); TR 488 (72); TR 489 (72)

I

Ingram, J. E., Jr. TR 463 (33)

J

Janicki, T. C. — TR 475 (71); TR 476 (71); TR 477 (71); TR 478 (71); TR 479 (71); TR 480 (72); TR 481 (72); TR 482 (72); TR 483 (72); TR 484 (72); TR 485 (72); TR 486 (72); TR 487 (72); TR 488 (72); TR 489 (72)

Johnson, D. D. — WP 242 (46); TR 464 (46); TR 490 (47); TR 474 (47)

Johnson, H. W. — TR 492 (29)

K

Kamm, K. — TR 465 (54)

Karges, M. L. — SIMF 6 (36)

Klausmeier, H. J. — WP 228 (17)

Klausmeier, T. W. — TR 461 (25)

Klenke, W. H. — SIMF 1 (35)

Klopp, P. M. — TR 465 (54)

L

Lawton, J. T. — TR 467 (5); TR 462 (6)

Lehr, J. — WP 231 (17)

Levin, J. R. — TR 450 (9); WP 229 (41); WP 238 (41); WP 239 (42); WP 248 (42); TP 72 (42); WP 246 (43); WP 241 (43); WP 235 (43)

Lipham, J. M. — WP 228 (17)

M

Maier, M. J. — TR 493 (26); SIMF 6 (36)

Massaro, D. W. — TR 453 (39)

Mathews, S. R.	WP 236 (59)
McCormick, C. B.	WP 241 (43)
McMahan, R.	TR 470 (3)
Miles, W. R.	SIMF 5 (36)
Miller, G. E.	WP 246 (43)
Morgan-Janty, C.	TR 474 (47); TR 490 (47)
Moser, J. M.	WP 245 (63); WP 234 (63); WP 237 (64)
Moser, M. K.	WP 245 (63); WP 234 (63); WP 237 (64)
Moser, R.	SIMF 1 (35)

N

Neiner, G. A.	TR 456 (27)

P

Palm, J. K.	TR 450 (9)
Perry, J.	TR 464 (46)
Peterson, P. L.	WP 243 (13)
Petzold, R. G.	WP 227 (31)
Pittelman, S. D.	TR 464 (46); TR 490 (47); TR 474 (47)
Plazewski, J. G.	TR 491 (11)
Popkewitz, T. S.	TP 71 (73)
Pressley, M.	WP 239 (42); TP 72 (42); WP 246 (43); WP 241 (43)
Price, G. G.	TR 475 (71); TR 476 (71); TR 477 (71); TR 478 (71); TR 479 (71); TR 480 (72); TR 481 (72); TR 482 (72); TR 483 (72); TR 484 (72); TR 485 (72); TR 486 (72); TR 487 (72); TR 488 (72); TR 489 (72)

R

Raskas, H. I. — SIMF 3 (35)

Read, C. — TR 466 (49); WP 233 (49)

Romberg, T. A. — TR 475 (71); TR 476 (71); TR 477 (71); TR 478 (71); TR 479 (71); TR 480 (72); TR 481 (72); TR 482 (72); TR 483 (72); TR 484 (72); TR 485 (72); TR 486 (72); TR 487 (72); TR 488 (72); TR 489 (72)

Rossmiller, R. A. — TR 451 (30)

Roth, P. — TR 462 (6)

Ruch, M. D. — WP 235 (43)

S

Saunders, R. — TR 462 (6)

Schall, W. E. — WP 245 (63); WP 234 (63); WP 237 (64)

Schreiber, P. — TR 466 (49); WP 233 (49)

Schwenker, J. — TR 464 (46); TR 490 (47); TR 474 (47)

Shriberg, L. K. — TR 490 (47); TR 474 (47)

Sipple, T. S. — TR 470 (3)

Smith, M. G. — TR 469 (55)

Stelmach, G. E. — TR 472 (19)

Stephenson, G. R. — WP 232 (51)

Stewart, D. M. — TR 465 (54); TR 475 (71); TR 476 (71); TR 477 (71); TR 478 (72); TR 479 (72); TR 480 (72); TR 481 (72); TR 482 (72); TR 483 (72); TR 484 (72); TR 485 (72); TR 486 (72); TR 487 (72); TR 488 (72); TR 489 (72)

Swinton, S. S. — TR 470 (3)

T

Teicher, B. WP 231 (17)

Trice, G. N. WP 234 (63); WP 237 (64)

Truman, D. L. WP 238 (41); WP 248 (42)

Tsui, P. WP 232 (51)

W

Walia, J. TR 466 (49); WP 233 (49)

Watkins, A. N. TR 460 (27)

Wende, J. L. WP 232 (51)

Wilkie, E. B. WP 230 (56); TR 458 (56)

Witte, P. L. TR 455 (57)

Wolf, A. E. TR 459 (58)

Y

Yussen, S. R. TR 452 (9); TR 450 (9)